The Economic Consequences of the Town of Apple Valley's Attempt to Condemn Liberty Utilities Apple Valley

by

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Reliable and affordable water service is a critical part of a community's economic foundation. A water system serves the water needs of residences, businesses, and community parks. It is a truism in the water policy and financial communities that supply reliability and well-maintained infrastructure are paramount objectives for successful water systems. Abrupt cutbacks in water service due to drought or regulatory restrictions on water sources or from inadequate infrastructure undermine the vitality of a local community. Failure to maintain and expand necessary infrastructure compromises the long-term sustainability of a water system. At the same time, customers are understandably concerned about their water costs. Given the challenges facing California water providers, both public and private, skilled management is required to ensure that reasonable investments are made to protect the long-term reliability of municipal water delivery at a reasonable cost.

Liberty Utilities (Apple Valley Ranchos Water) Corp ("Liberty Utilities Apple Valley) is an investor-owned utility created in 1947 by the Apple Valley Ranchos Development Company. The company was purchased in 1987 by the Park Water Company. In 2016, Liberty Utilities Co. ("Liberty Utilities") acquired the stock of Western Water Holdings, which is the sole shareholder of Park Water Company (now known as Liberty Utilities (Park Water) Corp). Liberty Utilities is a subsidiary of Algonquin Power & Utilities Corporation (APUC). Liberty Utilities owns and operates regulated water, wastewater, natural gas and electric transmission and distribution utilities in thirteen states, delivering essential services to approximately 800,000 customers across the United States.[2]

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[2] Algonquin Power & Utilities Corporation website, http://algonquinpower.com/our_business/.

The Town of Apple Valley ("Town") seeks to acquire Liberty Utilities Apple Valley by eminent domain. The presumption is that a successful acquisition will reduce water rates paid by the Town's residents and reduce the rate of future increases in water rates.

This paper analyzes what can be expected if the Town assumes ownership and control of Liberty Utilities Apple Valley. The discussion herein reveals:

- The important role of parent company in financing investment in Liberty Utilities Apple Valley infrastructure, a critical factor neglected by proponents of a Town takeover.

- How a Town acquisition sacrifices the economies of scale enjoyed by Liberty Utilities Apple Valley being a member of a parent company structure providing expertise and services that would not be economic to provide in-house in a smaller, standalone water system.

- The implications of needed financial and operating reserves as well as debt coverage ratios, factors which should not be neglected by proponents of Town ownership.

- Lacking access to parent company financing available to Liberty Utilities Apple Valley, the Town will be forced to pass through to its customers on a "pay as you go" basis financing for the inevitable future capital expenditures required to maintain a reliable water system.

The data set forth in this paper demonstrate that if the Town condemns Liberty Utilities Apple Valley by eminent domain, higher water rates for Town residents are a virtual certainty for decades to come. If the goal of acquiring Liberty Utilities Apple Valley is to charge lower water rates, then the effort should be abandoned because that goal is not a feasible outcome.

Town ownership would also significantly increase the cost of new development within Apple Valley. New real estate development funds the necessary capital expenditures to receive water service. Liberty Utilities Apple Valley refunds developers their investment costs over a 40-year period. Municipal ownership does not. When combined with connection fees charged by municipal water departments in the high desert, the cost borne by developers for connecting to municipal water systems would increase by 74%. The extra $11,700 of development costs per residential unit will either increase housing costs or make new development economically unviable.

Operationally, the size of Town government will have to expand rapidly in an effort to meet the significant technical and managerial demands of operating a municipal water system, none of which the Town possesses. Ownership and operation of Liberty Utilities Apple Valley's water system will dwarf all other services the Town currently provides.

Given these facts, the Town of Apple Valley condemnation of Liberty Utilities Apple Valley faces significant economic risks.

How Liberty Utilities Apple Valley Works

Liberty Utilities Apple Valley is regulated by the California Public Utilities Commission ("CPUC"). The CPUC sets and enforces standards for water service to protect the public health and safety of customers. Investments must be approved to assure that facilities are necessary and "used and useful" in terms of meeting CPUC standards of water service. Water rates are set by the CPUC to reflect the "cost-of-service." In determining the cost of service, the CPUC looks at actual water costs, operations and maintenance costs, depreciation, taxes and fees, and a regulated return on capital based on the net value of assets employed, "rate base" (original cost of investments financed by Liberty Utilities Apple Valley less cumulative depreciation on capital investments).

Maintaining and improving infrastructure as well as expanding water service to new developments in Apple Valley require significant capital investment. Table 1 shows that, for the period 2006-2017, Liberty Utilities Apple Valley funded capital expenditures of $58.1 million and developers funded capital expenditures of $22.6 million for a total of $80.7 million.[3] Capital expenditures under Liberty Utilities Apple Valley' long-term policy of replacing the system's main lines (to reduce water losses) accounted for $23.4 million of the $58.1 million capital expenditures funded by Liberty Utilities Apple Valley.

Table 1
Capital Expenditures on Liberty Utilities Apple Valley System

Year	*Company Funded Expenditures*	*Developer Funded Expenditures*	*Total Capital Expenditures*	*Company Funded Main Expenditures*
2006	$4,385,706	$7,883,712	$12,269,418	$436,726
2007	$3,581,481	$8,781,602	$12,363,083	$58,242
2008	$4,064,642	$742,854	$4,807,496	$1,039,041
2009	$2,023,523	$336,778	$2,360,301	$234,216
2010	$2,446,003	$804,658	$3,250,661	$635,247
2011	$3,451,643	$677,662	$4,129,305	$1,274,255
2012	$5,661,866	$494,343	$6,156,209	$2,894,168

[3] *Source*: Liberty Utilities Apple Valley

Year	*Company Funded Expenditures*	*Developer Funded Expenditures*	*Total Capital Expenditures*	*Company Funded Main Expenditures*
2013	$7,518,580	$88,837	$7,607,417	$3,344,313
2014	$8,166,239	$750,742	$8,916,981	$5,281,702
2015	$7,875,308	$1,380,273	$9,255,581	$4,789,663
2016	$2,592,048	$140,411	$2,732,459	$1,043,279
2017*	$6,351,729	$475,000	$6,826,728	$2,403,279
Cumulative	$58,118,767	$22,556,872	$80,675,639	$23,434,131

* estimated

The time profile of annual investment in Liberty Utilities Apple Valley reflects the growth in service connections over the past decade (see Figure 1).[4] Before the economic downturn in 2008, the number of service connections was rapidly expanding. Almost 2,000 new connections were added between 2004 through 2007 when developer funding was largest. The number of connections declined in 2008 by 148 connections. Since then, there has been small steady annual growth in service connections of less than 200 connections although 2015 witnessed a jump in total connections by 450 (more than twice the prior annual rate post-2008). Company funded investment in recent years is driven by the main replacement policy (see above).

It is important to understand how Liberty Utilities Apple Valley obtains funds to make capital expenditures. Liberty Utilities Apple Valley's parent company issues debt or additional equity when required to supplement available equity funds for financing capital investment. Debt is held at the parent company level. For the period 2005 through 2015, company funded capital expenditures in Liberty Utilities Apple Valley exceeded Liberty Utilities Apple Valley net income in all but two years (see Figure 2).[5] Company funded capital expenditures exceeded Liberty Utilities Apple Valley cumulative net income from 2005-2015 by $14.4 million. In other

[4] Compiled from Schedule D-4 of CPUC annual reports. Number of connections exclusive of connections for fire service.

[5] *Source*: compiled from annual reports filed with CPUC. Company funded capital expenditures calculated by the difference between additions to plant in a calendar year (from Schedule A-1a) less additions in a calendar year for Advances for Construction (from Schedule A-34) less additions in a calendar for Contributions in Aid of Construction (Schedule A-35). Net income compiled from Income Statement generally at page 7 in CPUC annual reports.

words, Liberty Utilities Apple Valley reinvested all of its net income plus an additional $14.4 million to fund CPUC-approved capital expenditures.

Figure 1
Liberty Utilities Apple Valley's Active Service Connections

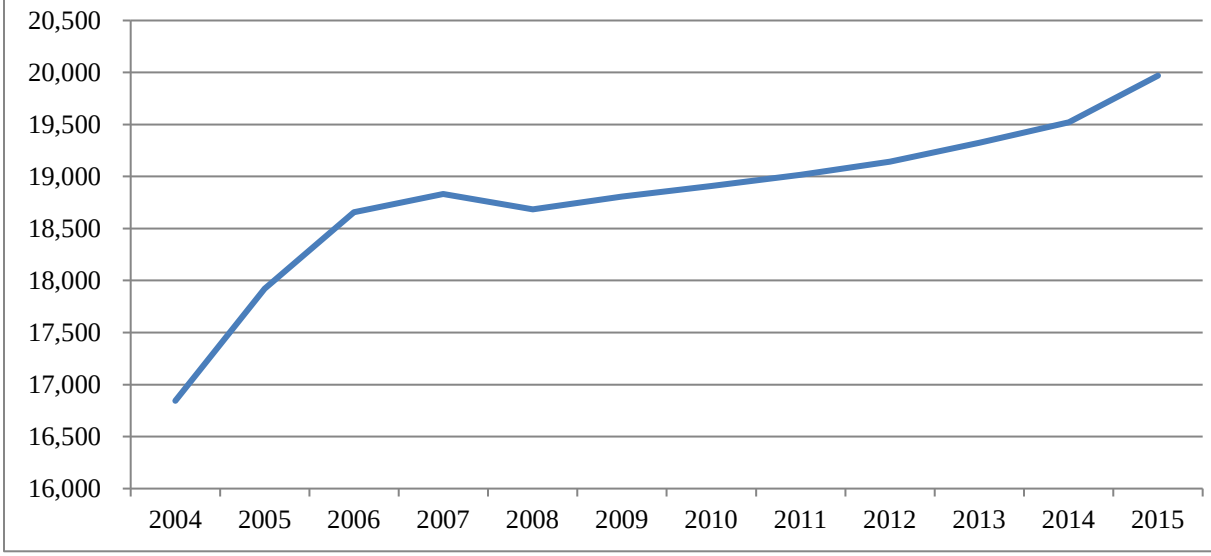
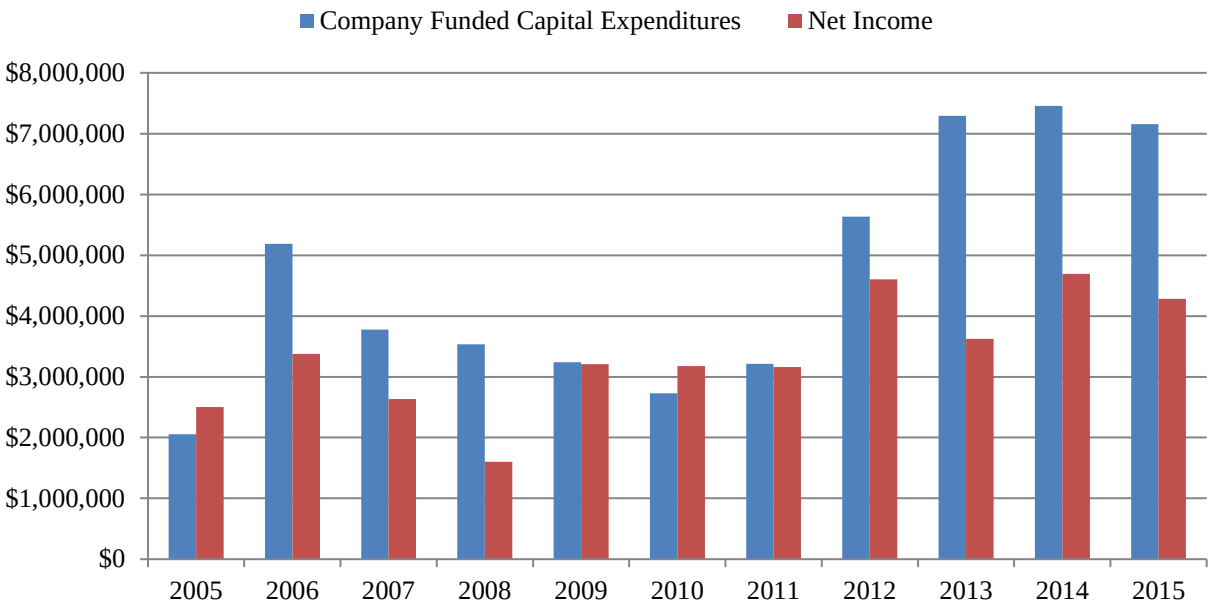


Figure 2
Parent Company Reinvestment in Liberty Utilities Apple Valley

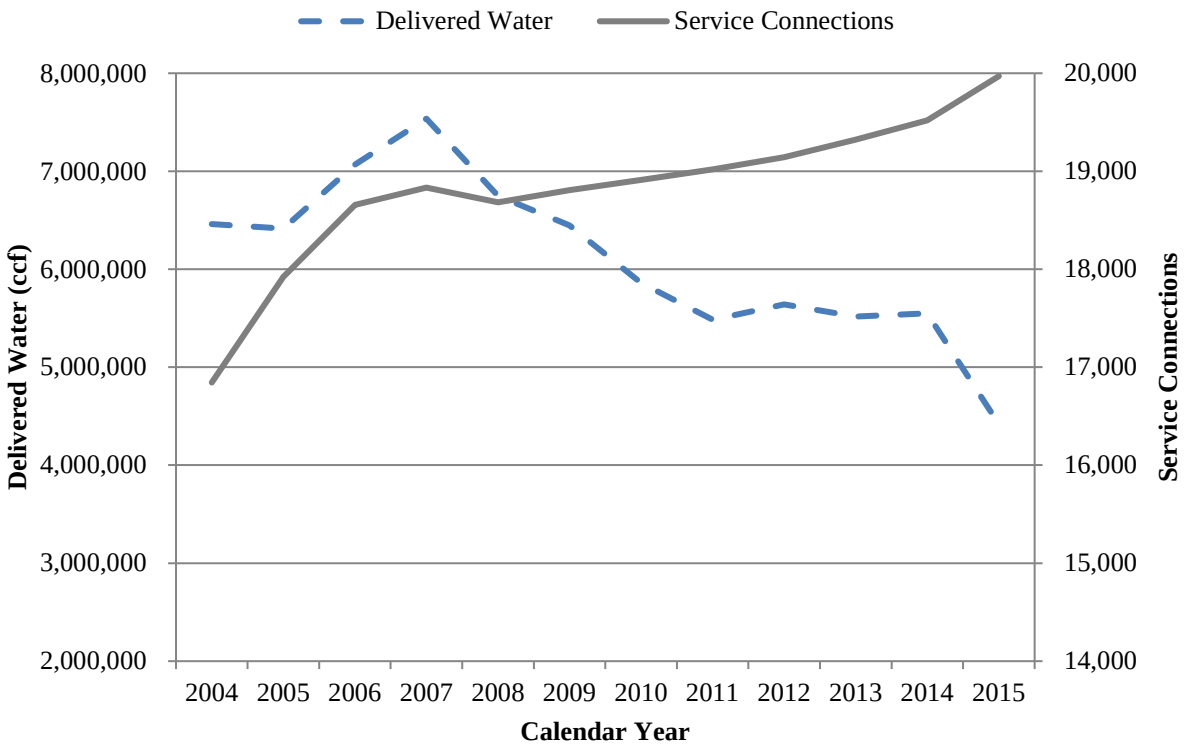


Shareholder equity and return are critical elements for developing and maintaining a sustainable water system. Shareholder equity provides the risk capital that makes debt financing

viable. Equity return rewards shareholders for bearing risk. For systems that have additional investment requirements, such as Liberty Utilities Apple Valley, the equity return is reinvested back into the system. This capability and willingness of the parent company to invest in Liberty Utilities Apple Valley has been amply demonstrated for over the past decade.

Whether investor or government owned, municipal water systems face a variety of risk factors. A major one involves how variable and declining water demands interact with a cost structure dominated by fixed costs (costs that do not vary with volume of water sold). The volume of delivered water was increasing until the 2008 economic downturn (see Figure 3). Thereafter, the volume of water delivered has been declining at the rate of 5.1% per year.[6] This decline in the annual volume of water delivered is in the face of continued growth in the number of service connections.

Figure 3
Liberty Utilities Apple Valley

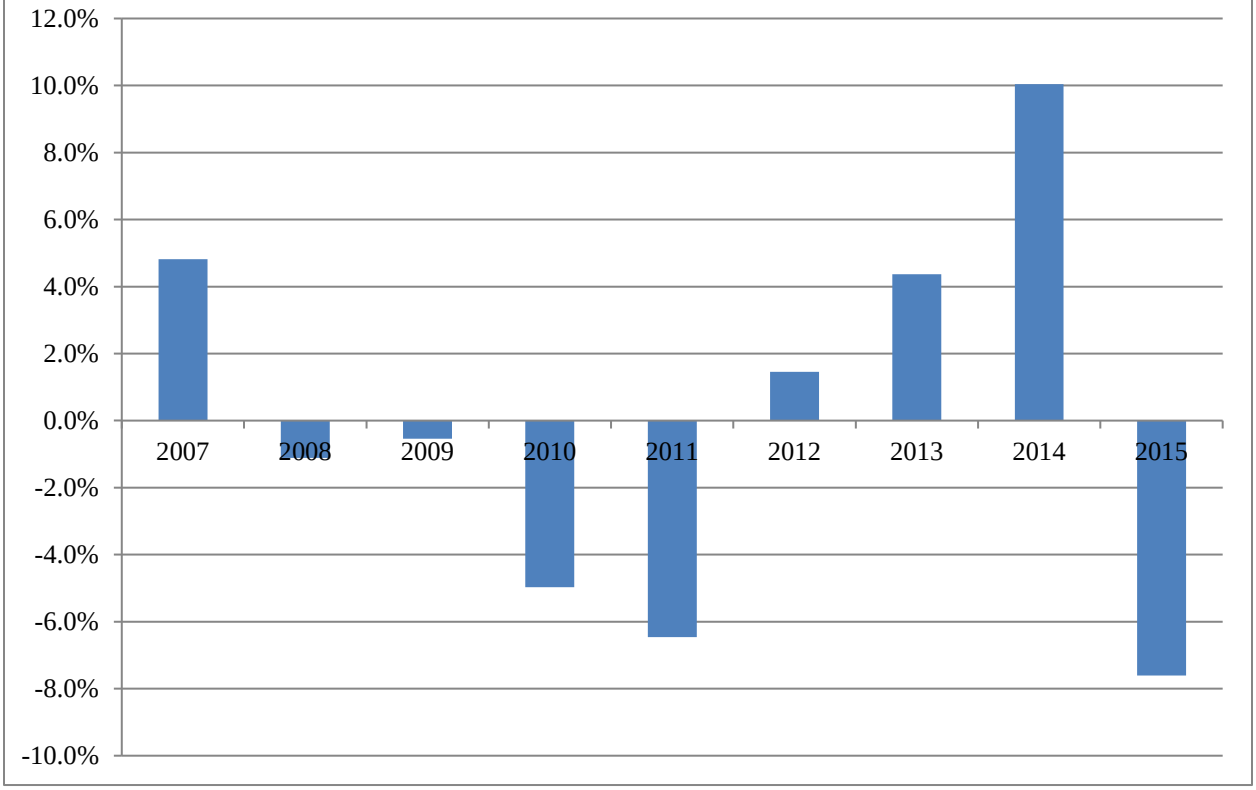


The operational experience since 2007 suggests that volume of delivered water varies between +10% and -8% from trend (see Figure 4). A significant equity cushion is required to

[6] Estimated coefficient of a regression relating the natural logarithm of annual volume of water delivered to year for the period 2007-2015.

meet debt service obligations in the face of this demand volatility. Park Water's CPUC-approved capital structure is 43 percent debt and 57 percent equity.[7]

Figure 4
Deviation of Annual Volume of Water Delivered from Trend



The CPUC sets water rates paid by customers of Liberty Utilities Apple Valley. The CPUC rates are based on a "Revenue Requirement" (the costs of meeting assumed levels of water demands).

Table 2 calculates an annual Revenue Requirement for Liberty Utilities Apple Valley for Calendar Year 2011 through 2016—the actual costs incurred (Total Water Supply Costs, Operations & Maintenance, Administration & General Overhead, Shared Services, Depreciation, and Taxes) plus an Allowed Return based on the Liberty Utilities Apple Valley Rate Base and the CPUC Allowed Return. Depreciation has two components: (1) funds made available to Liberty Utilities Apple Valley reflecting the depreciation of assets funded by Liberty Utilities Apple Valley, and (2) funds made available to pay rebates to developers for their payment of Advances for Construction and Contributions in Aid of Construction. Table 3 shows the Allowed Return as percentage of Rate Base. In any year, Liberty Utilities Apple Valley actual revenue in any year may differ from this revenue requirement if actual water sales are different

[7] See Joint Application of Park Water Company (U314W) and Apple Valley Ranchos Water Company (U346W) for Authority to Establish an Authorized Cost of Capital for 2013 -2015, page 2. .http://docs.cpuc.ca.gov/publisheddocs/published/g000/m065/k575/65575602.pdf.

than sales projections or actual costs differ from cost projections used in the setting of CPUC-approved water rates.

Table 2
Liberty Utilities Apple Valley Revenue Requirement

Item	2011	2012	2013	2014	2015	Annual Increase
Revenue Requirement[8]	$20,175,104	$21,310,477	$22,105,078	$21,770,788	$23,873,962	3.4%
Water Supply Cost[9]	$2,565,454	$2,612,682	$2,793,704	$2,620,360	$2,604,437	0.3%
Operations & Maintenance[10]	$2,265,203	$2,153,139	$2,067,558	$1,913,933	$2,046,496	-2.0%
Admin & General[11]	$4,252,491	$4,514,820	$4,772,579	$4,248,977	$5,372,817	4.8%
Shared Services[12]	$2,236,445	$2,137,817	$2,086,107	$1,722,490	$1,749,786	-4.8%
Deprecation[13]	$2,444,421	$2,650,768	$2,800,190	$3,057,100	$3,190,498	5.5%
Liberty Utilities Apple Valley[14]	$1,373,226	$1,562,764	$1,676,288	$1,968,015	$2,070,185	8.6%
Rebates[15]	$1,071,195	$1,088,004	$1,123,902	$1,089,085	$1,120,313	0.9%
Property Taxes[16]	$401,601	$405,777	$413,513	$468,161	$514,719	5.1%
Non-Income Taxes[17]	$220,934	$238,405	$252,705	$291,777	$280,022	4.9%

[8] Revenue Requirement: sum of rows Water Supply Cost through Allowed Return exclusive of Depreciation Liberty Utilities Apple Valley and Developer Rebates (which are included in the row Depreciation)

[9] Water Supply Costs: sum of operating expenses for Sources of Supply, Pumping and Treatment from Schedule B-2 of CPUC reports. .

[10] Operations & Maintenance: sum of operating expenses for transmission/distribution, customer accounts, sales and miscellaneous from Schedule B-2 of CPUC reports.

[11] Administration and General: operating expenses for administration and general less operating expenses for Main Office Allocation from Schedule B-2 of CPUC reports.

[12] Shared Services: operating expenses for Main Office Allocation from Schedule B-2 of CPUC reports, which is an apportionment of parent company personnel and services related to executive management, human resources, water quality, infrastructure planning/operations, information technology, accounting and financial matters, regulatory affairs, legal and risk management.

[13] Deprecation: from Schedule A-3 of CPUC reports.

[14] Depreciation—Liberty Utilities Apple Valley: from Schedule A-3 of CPUC reports less Depreciation—Developer Rebates

[15] Depreciation-Developer Rebates: rebates for Advance Construction (Schedule A-34) and rebates for Contributions in Aid of Construction (Schedule A-35) of CPUC reports.

[16] Property Taxes: from Schedule B-4 of CPUC reports.

[17] Non-Income Taxes: payroll taxes and other state and local taxes from Schedule B-4 of CPUC reports.

Item	2011	2012	2013	2014	2015	Annual Increase
Income Taxes[18]	$2,054,376	$2,713,830	$2,844,264	$3,040,971	$3,195,704	9.2%
Allowed Return[19]	$3,734,179	$3,883,239	$4,074,458	$4,407,019	$4,919,483	5.7%

Table 3
Liberty Utilities Apple Valley Allowed Return

Item	2011	2012	2013	2014	2015	Annual Increase
Allowed Return	$3,734,179	$3,883,239	$4,074,458	$4,407,019	$4,919,483	5.7%
Rate Base	$39,640,964	$41,223,346	$44,922,359	$48,588,963	$54,239,061	6.5%
CPUC Return	9.42%	9.42%	9.07%	9.07%	9.07%	-0.8%

Taken together, Tables 2 and 3 reveal the following about Liberty Utilities Apple Valley:

- The annual Revenue Requirement increased from $20.2 million in 2011 to $23.9 million by 2015 (annual increase of 3.4%). With the volume of delivered water declining by 5.1% annually (see discussion of Figure 3), the Revenue Requirement per volume of water delivered increased annually by 9%.[20]

- The CPUC Allowed Return grew at an annual rate of 5.7% This growth in the Allowed Return was dominated by the growth in the Rate Base (6.5%)—reflecting the company's capital improvement program over the period.

- Depreciation grew at an annual growth rate of 5.5% reflecting the increased investment in Liberty Utilities Apple Valley. Reflecting the increase in Liberty Utilities Apple Valley investment relative to Advances for Construction and Contributions in Aid of Construction from developers (see Table 1), depreciation on Liberty Utilities Apple Valley investment grew significantly faster (8.6%) than developer rebates (0.9%).

- With slower growth in connections since 2008 (see Figure 1), shared services has been declining by 4.8% annually during 2011-2015. There has been a shift towards increased administration/general at Liberty Utilities Apple Valley which

[18] Income Taxes: Federal and California from Schedule B-4 of CPUC reports. .

[19] Allowed Return: Liberty Utilities Apple Valley Rate Base (from Schedule A-1d of CPUC reports) multiplied by the authorized CPUC return (data provided by Apple Valley Ranchos Water Company). The rate base in Table 2 and Table 3 is the average of the beginning of the year and end of year rate base.

[20] With annual Revenue Requirements increasing by 3.4% and the volume of water delivered declining by 5.1% per year, the annual rate of increase in Revenue Requirement per volume of water delivered equals (1+.034)/(1-.051) = 1.09, or 9%.

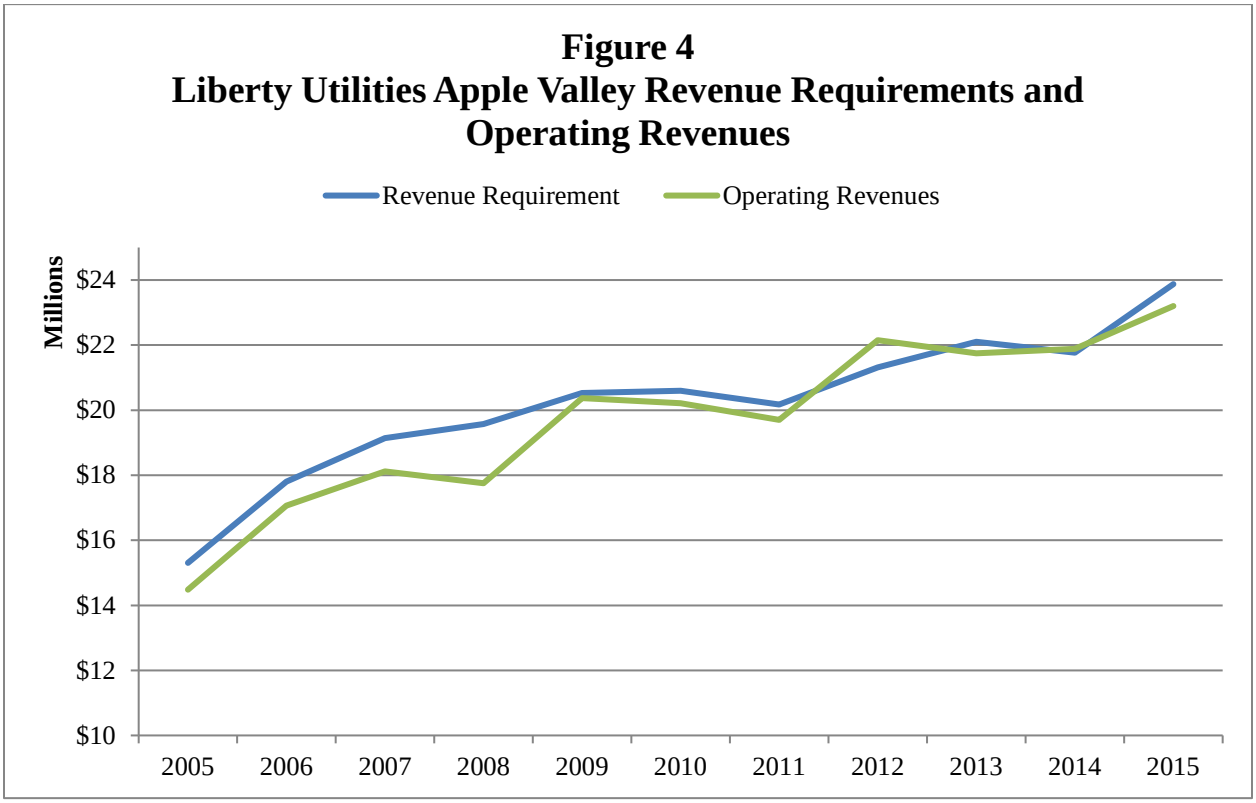
grew at an annual rate of 4.8%. This shift is a driver of the increase of non-income taxes which grew at an annual rate of 4.9%.

- Property taxes and income taxes increased at annual rates of 5.1% and 9.2% respectively. The increased investment in Liberty Utilities Apple Valley is the key driver. Growth in property taxes reflects increased assessed valuations from investments in Liberty Utilities Apple Valley. Growth in income taxes reflects increased allowed returns from the growth in Liberty Utilities Apple Valley rate base.

- Water Supply Costs exhibited slight growth (0.3%) and Operations and Maintenance Costs exhibited a slight decline (-2.0%).

The estimated revenue requirements closely follow Liberty Utilities Apple Valley' operating revenues (see Figure 4).[21] As discussed above, Liberty Utilities Apple Valley actual operating revenue in any year may differ from the estimated revenue requirement if actual water sales are different than sales projections or actual costs different from cost projections used in the setting of CPUC-approved water rates. Annual variations in the estimated revenue requirement and actual operating revenues closely track each other—the correlation is 0.97. For the eleven years in Figure 4, Liberty Utilities Apple Valley's annual operating revenues averaged $19.7 million, slightly less than the $20.2 million annual average for the estimated revenue requirement.

Figure 4
Liberty Utilities Apple Valley Revenue Requirements and Operating Revenues



[21] Data on Liberty Utilities Apple Valley' operating revenue from Schedule B-1 in CPUC annual reports.

How Town Acquisition of Liberty Utilities Apple Valley Would Work

There are two basic questions about the Town's acquisition of Liberty Utilities Apple Valley:

- What would be the financial structure of the Town-owned water department? As discussed below, there is more to municipal finance than simply borrowing the money needed to pay the parent company.

- Second, how will the Town-owned water department replicate the services and the investment Liberty Utilities Apple Valley has provided to its customers? The Town's "stand alone" department will face challenges related to funding and operations that are not faced by a larger water provider.

Financial Structure of Town-Owned Utility

While a government-owned water system does not have shareholders, it does not follow that the acquisition and operation of the system can be financed by simply borrowing the amount needed to purchase and operate the system. Rather, extra borrowing is needed to create an equity cushion. Consider the example of traditional financing of a home purchase. The homeowner must make a down payment on the house to borrow the balance of the purchase price from a bank. A 20% down payment, for example, has traditionally been regarded as the minimum "equity" portion of the home financing. In addition, the homeowner must also qualify for the loan by having sufficient income relative to the mortgage obligation — not just enough income to pay the mortgage, but also some "cushion" of income to provide necessary comfort to the lender that the payments will be made regardless of fluctuation in other expenses or income the homeowner may incur.[22]

The municipal capital market in which the Town of Apple Valley would seek funding to acquire Liberty Utilities Apple Valley demands prudent financial structure. Consider, for example, the Metropolitan Water District of Southern California (MWD), which is the provider of supplemental surface water throughout Southern California. In part to satisfy the capital markets, MWD's finance plan has three components:[23]

- Equity Financing: Pay-as-you-go financing where 25% of major capital investments are funded from reserves accumulated in prior years from rates charged its customers.

- Debt Service Coverage Ratio: Set rates so that net revenues of the system (revenues less operating costs) are 2 times debt service obligations.

[22] While some banks deviated from this model in the years leading up to the housing crash in 2008, the resulting financial catastrophe from the defaults on nontraditional loans is testimony to the consequences of deviating from sound financial principles.

[23] Metropolitan Water District of Southern California, *2004/05 Long Range Finance Plan*, October 11, 2004. Available on Metropolitan's website.

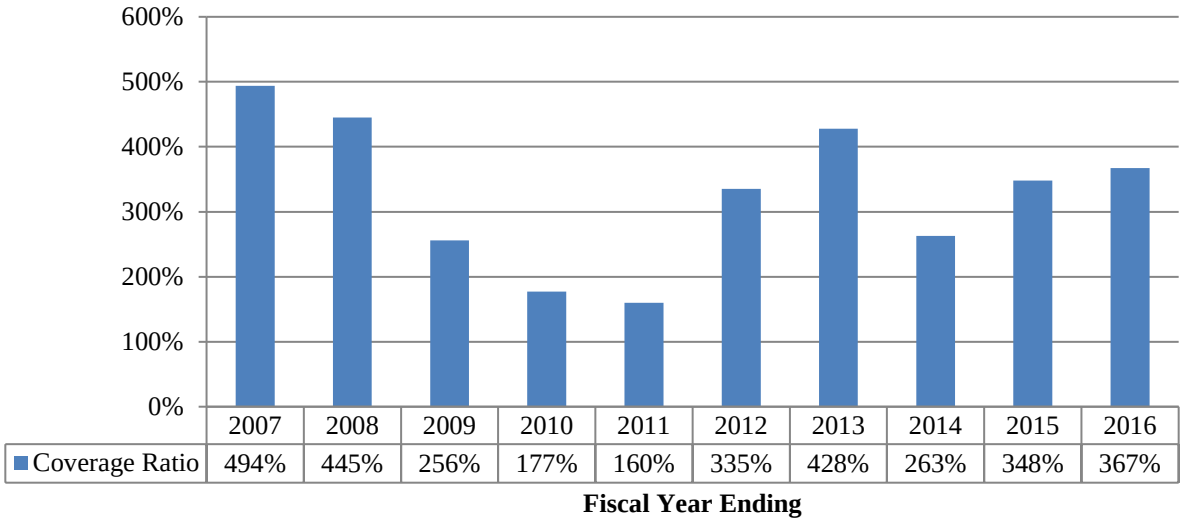
- Operating Reserves: unrestricted funds and cash investments equal to 173 days of operations.

MWD's track record of aggressively raising rates to meet its debt service coverage and accumulate reserves is the foundation of its ability to raise funds in the municipal bond market at advantageous rates.[24] MWD's finance plan calls for debt coverage ratios far in excess of the minimum amount specified in its rate covenants (generally 125 percent).

In effect, there are two debt coverage ratios. The bond covenant coverage ratio is a contractual obligation to bondholders for the borrower to set water rates so that net revenues of the system (generally revenues less operating expenses) are at least equal to a stated percentage of debt service obligations—commonly 125 percent. Municipal water agencies set objectives for debt service coverage greater than the amount stated in the bond covenant. The "extra cushion" from actual debt coverage exceeding the bond covenant debt coverage allows the borrower to avoid being in default of the debt coverage bond covenant if water sales are lower than projected or operating costs higher than expected.

The City of Hesperia has set water rates to yield actual coverage ratios over the past decade that averaged 327 percent of actual debt service obligations of its water revenue bonds (see Figure 5).[25] Hesperia's debt coverage ratio exceeded 400 percent before the 2008 economic downturn. Actual debt coverage declined significantly in the aftermath of the 2008 downturn, reaching a low of 160 percent in fiscal year ending June 30, 2011. Since that time, water rates have been set to yield actual debt coverage ratios in excess of 250 percent.

Figure 5
Debt Coverage for City of Hesperia
Water Department Water Revenue Bonds



[24] Standard & Poor's RatingsDirect, *Metropolitan Water District of Southern California; Water/Sewer, September 7, 2012*. Available on Metropolitan's website.
[25] *Source:* City of Hesperia Comprehensive Financial Report Fiscal Year Ended June 30, 2016, p. 178.

The setting of municipal water rates reflects the cost-of-service and finance plan for the municipal water system. Key components of the finance plan include reserve policy and funding of continued capital improvements. Operating reserves provide financial resources for a municipal water system to withstand the financial stress from unexpected decline in water sales relative to projected sales used in setting water rates or from unexpected increase in operating costs relative to projected costs used in setting water rates.

The Town of Apple Valley, of course, starts with a blank slate. It has no accumulated financial reserves from pay-as-you-go financing of the water department. It has no unrestricted funds and cash investments for operating reserves. In addition the financing would include reimbursement of the Town's costs incurred during the condemnation process (legal, appraisal, consulting, environmental and other expenses).[26] The assumptions regarding the initial funding of the Town's water system necessary to meet the package of requirements demanded by the municipal bond market are the following:

- Term of Financing: 30 years
- Interest Rate:[27] 5.25%
- Annual Debt Service Reserve: one-year debt service obligation
- Operating Reserve: 173 days operating costs (exclusive of depreciation)
- Issuance Costs: 3%
- Debt Service Coverage Ratio: (see discussion below)

It is impossible at this point to calculate actual financial implications of the above requirements, because of uncertainty in the level of funding required. The most obvious uncertainty involves the purchase price the Town will be required to pay for Liberty Utilities Apple Valley, which would be determined in a condemnation lawsuit. Table 4 shows how the size of the acquisition financing varies with the price included in the final judgment of the condemnation lawsuit. The table's calculations use four different price assumptions for illustration purposes. Three valuations relate to the low, middle and high end of the range of valuations discussed in the 2011 Blue Ribbon Committee Report adjusted by the growth in Liberty Utilities Apple Valley rate base from 2011 to 2016: $70 million, $178 million, and $294 million.[28] The $112.8 million valuation is consistent with a $150 million bond issue.

[26] In its attempt to condemn Golden State Water Company Claremont Water System, the City of Claremont spent more than $6 million through Phase 1 of an originally planned two phase trial. Phase 1 involved whether Claremont had a right to condemn Golden State Company's Claremont Water System. The superior court held that the city did not have the right to condemn. Therefore, the expenses incurred to date by Claremont do not include the cost of a complete condemnation. Based on the Claremont experience, the analysis below assumes that the Town's cost for the condemnation process will equal $8 million.

[27] The Town's feasibility study assumed an interest rate of 5.25%--see "Town of Apple Valley, Financial Feasibility Analysis for the Acquisition of The Apple Valley Ranchos Water Company," Urban Futures, February 11, 2014.

[28] For discussion of range of potential acquisition prices, see Blue Ribbon Committee Report, *Town of Apple Valley's Best Opportunity for Affordable Water and Economic Sustainability,* December 12, 2011, pp. 43-44. Reflecting Liberty Utilities Apple Valley investment in replacing mains and other improvements, the rate base in 2016 is 47% higher than in 2011. The acquisition costs in Table 4 equal the low, middle and high range from the 2011 Blue Ribbon Committee Report multiplied by 1.47.

Table 4
Size of Acquisition Financing By Size of Acquisition Cost

Acquisition Cost	$71 mil	$112.8 mil	$178 mil	$294 mil
Source of Funds				
Par Value of Bonds	$103,701,811	$150,000,000	$222,184,821	$350,633,691
Use of Funds				
Purchase Price	$71,000,000	$112,811,111	$178,000,000	$294,000,000
Capital Improv. Fund	$7,540,000	$7,540,000	$7,540,000	$7,540,000
Cost Reimbursement	$8,000,000	$8,000,000	$8,000,000	$8,000,000
Annual Debt Reserve	$6,939,407	$10,037,540	$14,867,927	$23,463,331
Operating Reserve	$7,111,349	$7,111,349	$7,111,349	$7,111,349
Issuing Costs	$3,111,054	$4,500,000	$6,665,545	$10,519,011
Total	$103,701,811	$150,000,000	$222,184,821	$350,633,691

Table 4 shows that the Town must borrow $103.7 million to fund the acquisition at the low end of the Blue Ribbon Committee's range. The larger the purchase price, of course, the larger the debt offerings. If the value of Liberty Utilities Apple Valley is at the mid range number of $178 million or at the high end range number of $294 million, the Town must borrow $222.2 million or $350.6 million, respectively, to acquire Liberty Utilities Apple Valley, meet Annual Debt Reserve and Operating Reserve requirements, reimburse costs incurred in the condemnation process and pay issuing costs. A $150 million bond issue pays for an acquisition price of $112.8 million.

How will the costs (and hence the water rates) for the Town-owned system compare with private ownership? The answer is provided by comparing the Revenue Requirement of Liberty Utilities Apple Valley (Table 5) with the Revenue Requirement of the Town-owned system (Table 6). [29]

[29] The Liberty Utilities Apple Valley Revenue Requirement ($24.8 million) is estimated by applying the annual growth rate in each component (Total Water Supply Cost through Allowed Return) to the 2015 values found in Table 2.

Table 5
Annual Revenue Requirement of Liberty Utilities Apple Valley

Revenue Requirement	**$24,815,237**
Total Water Supply	$2,612,304
Non-water O&M	$2,005,357
Depreciation	$3,377,712
Liberty Utilities Apple Valley	$2,247,308
Developer Rebate	$1,130,404
Admin & General	$5,630,070
Shared Services	$1,665,982
Property Taxes	$540,910
Other Non Income Taxes	$293,615
Income Taxes	$3,490,952
Allowed Return	$5,198,336

Table 6
Annual Revenue Requirement of Town-Owned System
by Acquisition Cost

Acquisition Cost	**$71 mil**	**$112.8 mil**	**$178 mil**	**$294 mil**
Revenue Requirement	**$31,658,290**	**$35,580,670**	**$41,765,982**	**$57,237,710**
Total Water Supply Cost	$2,612,304	$2,612,304	$2,612,304	$2,612,304
Operations & Maintenance	$2,005,357	$2,005,357	$2,005,357	$2,005,357
Admin & General	$5,630,070	$5,630,070	$5,630,070	$5,630,070
Shared Services	$3,331,964	$3,331,964	$3,331,964	$3,331,964
Developer Rebates	$1,130,404	$1,130,404	$1,130,404	$1,130,404
Non-Income Taxes	$293,615	$293,615	$293,615	$293,615
Sub-Total	$15,003,713	$15,003,713	$15,003,713	$15,003,713

Acquisition Cost	**$71 mil**	**$112.8 mil**	**$178 mil**	**$294 mil**
Capital Charge[30]	$16,654,577	$20,576,957	$26,762,268	$42,233,997
Contribution to CAPEX and Financial Reserves	$7,980,318	$8,030,032	$8,177,360	$8,212,166

Tables 5 and 6 show that the Revenue Requirement of the Town-owned system differs from Liberty Utilities Apple Valley' in the following ways:

- Where the Shared Services are in-house for Liberty Utilities Apple Valley, the Shared Services for the Town must be outsourced because these professional services are not required full-time for Liberty Utilities Apple Valley. The parent company has full-time professionals on staff to address issues throughout all franchises. Those professionals are essentially "on call" when needed to service Liberty Utilities Apply Valley, yet only a portion of the costs are allocated to the Liberty Utilities Apple Valley. A Town-owned system must outsource these tasks to part-time consultants, or, alternatively, hire more full-time employees to operate the water system than does Liberty Utilities Apple Valley. Therefore, the estimate in Table 6 doubles the Shared Services costs above those incurred by Liberty Utilities Apple Valley.[31]

- Under CPUC regulation, a portion of the depreciation funds is developer rebates for Advances for Construction and Contributions in Aid of Construction. These rebates are specified in contractual obligations between Liberty Utilities Apple Valley and developers. By condemning Liberty Utilities Apple Valley, the Town would be "stepping into the shoes" of Liberty Utilities Apple Valley and assume those payment obligations. A condemnation can only avoid the depreciation charged on capital investments funded by Liberty Utilities Apple Valley.

- The Town-owned system pays only payroll taxes and not property taxes while Liberty Utilities Apple Valley also pays property taxes and income taxes. The estimated annual cost savings of $540,910 in property taxes are revenue losses for local governments. The estimated annual cost savings of $3,490,952 are revenue losses for state and federal government.

- Finally, rather than having the allowed return of CPUC regulation and depreciation charges for Liberty Utilities Apple Valley funded investment, the Town-owned system levies a capital charge to generate debt service coverage.

[30] Capital charge equals annual debt service (see Table 4 Annual Debt Reserve) multiplied by operating debt service coverage of 2.40 for acquisition based on a price of $71 million, 2.05 for acquisition based on $112.8 million, 1.80 for acquisition based on $178 million price and 1.60 for acquisition based on $294 million price. These coverage ratios generate cash over the bond covenant debt ratio of 1.25 to fund annual CAPEX and make a modest contribution to financial reserves.

[31] Consultant hourly rates represent two to three times the compensation paid full-time employees.

The magnitude of the charge, of course, will depend on the value of Liberty Utilities Apple Valley and debt coverage in the Town's financial plan. The debt coverage ratios used in the calculations reported in Table 6 generate excess funds above the bond covenant coverage ratio (125 percent) to generate $8.0 million to fund annual capital improvements and make contributions to financial reserves.[32]

In the end, Town ownership is more expensive than Liberty Utilities Apple Valley ownership under all scenarios (Figure 6). The major driver of added costs is the differences in the capital charge. The higher capital charge more than offsets the taxes, allowed capital return and depreciation avoided by Town ownership.

Figure 6
Town Ownership More Costly Than Investor Ownership

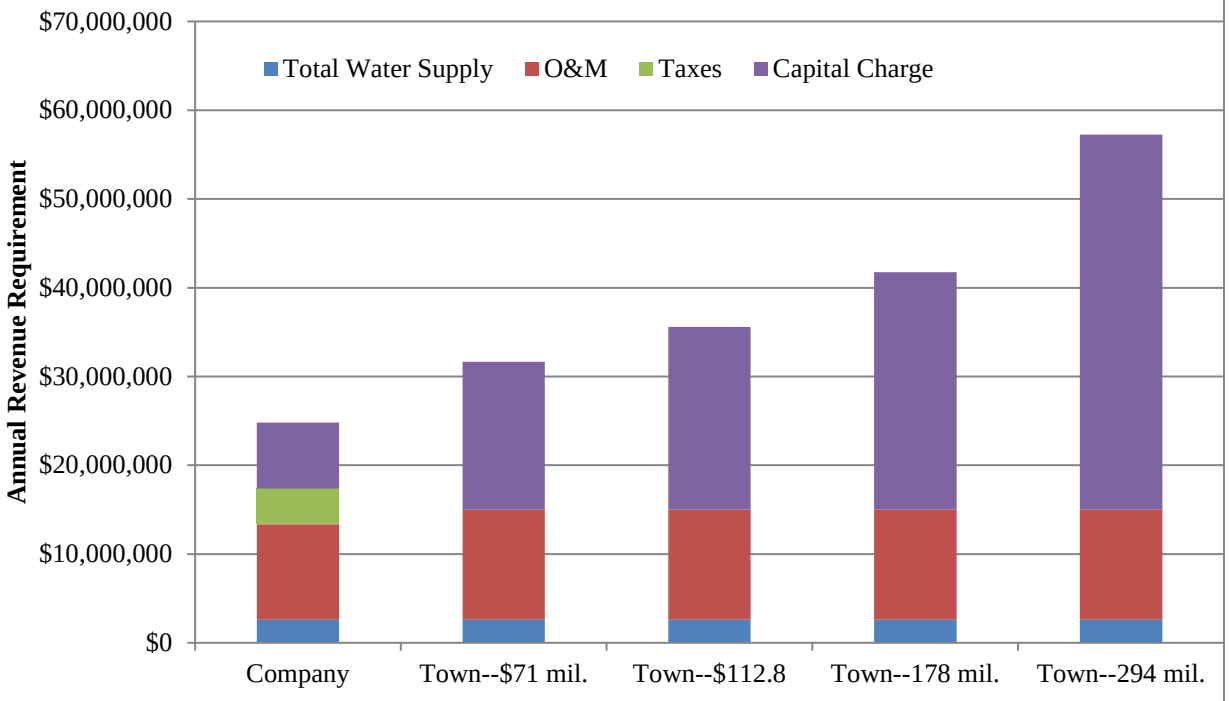


Table 7 shows the annual increase in the Revenue Requirement of the Town-owned system and the percentage by which that Revenue Requirement would be increased above the Revenue Requirement of Liberty Utilities Apple Valley ownership. Table 7 also shows the

[32] Liberty Utilities Apple Valley' CAPEX spending has recently averaged $6.5 million per year. Furthermore, municipalities require payment of prevailing wage in construction, which can increase project costs by 16%. See "Wisconsin Lesson for Trump the Builder: 'Project Labor Agreements' Drive Up on Public Works Projects," *Wall Street Journal*, April 16, 2017, https://www.wsj.com/articles/a-wisconsin-lesson-for-trump-the-builder-1492366467. Therefore, the Town's annual CAPEX spending would equal $7.5 million.

additional charge that would be borne by each water connection to cover the increase in the Revenue Requirement.[33]

Table 7
Increased Annual Revenue Requirement Resulting from Town Ownership

Acquisition Cost/Bond Size	**$71 mil/ $100 mil**	**$117.8 mil/ $150 mil**	**$178 mil/ $214 mil**	**$294 mil/ $338 mil**
Annual Increase Above Liberty Utilities Apple Valley	$6,843,053	$10,765,433	$16,950,744	$32,422,473
Percent Increase	27.6%	43.4%	68.3%	130.7%
Increase/Connection	$342	$538	$848	$1,621

Table 7 shows that even if the purchase price of the system is $71 million, the annual Revenue Requirement of the Town-owned water system increases by $6.8 million—an increase of 27.6%. This annual increase translates into $342 per connection. Higher acquisition costs will generate even larger increases—$1,621 annually per connection if the purchase price is $294 million.

Town ownership would also significantly increase the cost of new development within Apple Valley. New real estate development funds the necessary capital expenditures to receive water service. Liberty Utilities Apple Valley rebates developers their investment costs over a 40-year period. Developers can sell these contractual annuities in a specialized market receiving a price based on an 8% interest rate.[34] The market value of the annuity is 30% of its face value.[35] Therefore, the net cost of funding water investments necessary for their real estate development is 70% of the money funded for Advances for Construction and Contributions in Aid of Construction.

Consider the circumstance of the proposed Hacienda at Fairview Valley development in the Liberty Utilities Apple Valley service area. The development proposes construction of 3,114 residential units.[36] The necessary infrastructure investment funded by the developer to connect Hacienda for water service is estimated at $70 million.[37] This translates into a capital investment for water service at $22,479 per unit.[38] Taking into account the market value of the annuity a

[33] There are currently about 20,000 connections in Liberty Utilities Apple Valley.
[34] Discussion with Park Water management.
[35] 30% equals the present value of a 40-year annuity payment 1/40th of a dollar per year using a 8% interest rate.
[36] Hacienda at Fairview Valley, Draft Specific Plan submitted to County of San Bernardino, Land Use Planning Division, July 2009, p. 5-1.
[37] Estimate provided by senior management at Park Water.
[38] $22,479 = $70 million/3,114

developer receives from Liberty Utilities Apple Valley, the net cost of securing water service is $15,777 per unit.[39]

Municipal ownership does not provide any credit for developer financed capital investment to secure water service. There is no annuity to offset the developer's cost. When combined with connection fees charged by municipal water departments in the high desert, the cost borne by developers for connecting to municipal water systems would increase by 74%.[40] The extra $11,700 development costs estimated per residential unit will either increase housing costs or make new development economically unviable.

The Impact and Responsibilities of City Control of the Water System

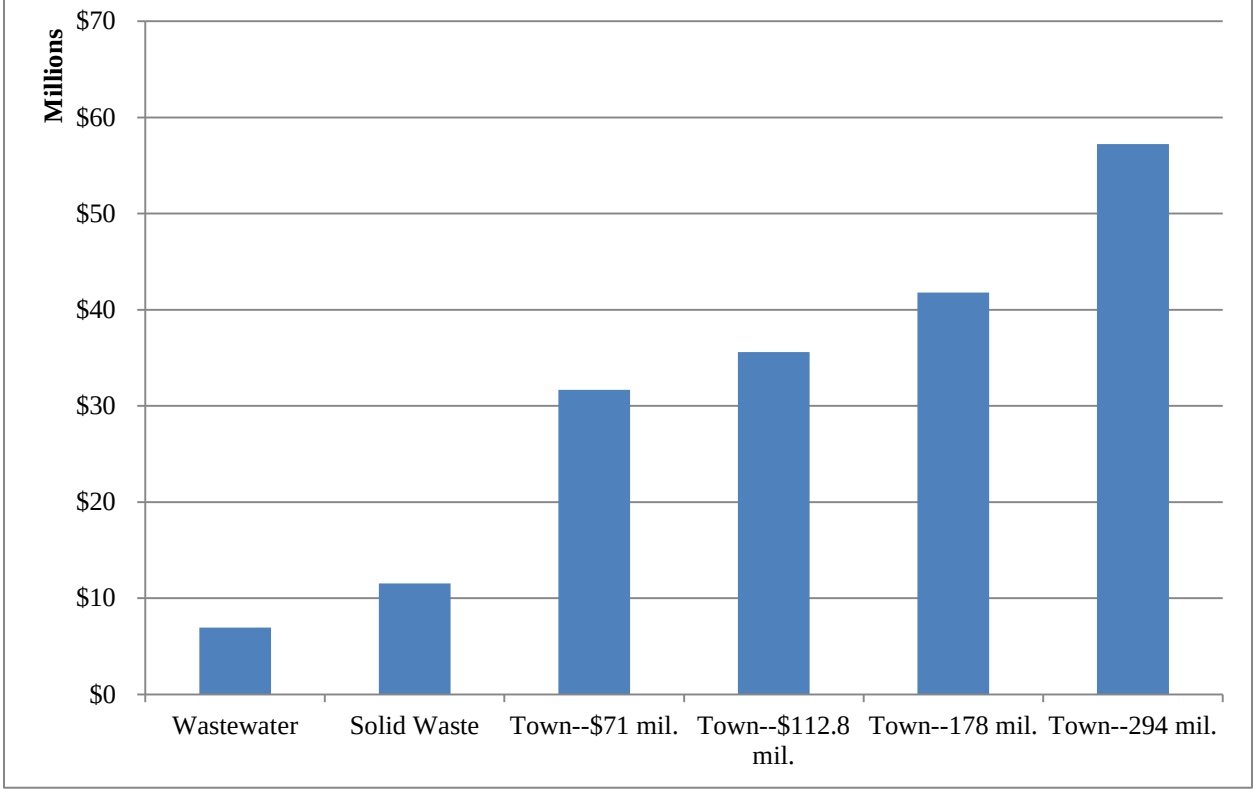
The Town acquisition of Liberty Utilities Apple Valley would represent a major expansion of Town government into business activity. Currently the Town has wastewater and solid waste management enterprises with operating revenues of $11.5 million and $6.9 million, respectively (see Figure 7).[41] Acquisition of the water system would double operating revenues managed by the Town, even if it was able to acquire the water system at the low end of the valuation range discussed by the Blue Ribbon Committee ($71 million).

[39] $15,777 = (1-.30)*$22,479

[40] In the case of Hacienda at Fairview Valley, adding a $5,000 per unit connection fee, the total per unit cost of securing water service becomes $27,479, which is $11,700 higher than the per unit cost for securing water service from Liberty Utilities Apple Valley.

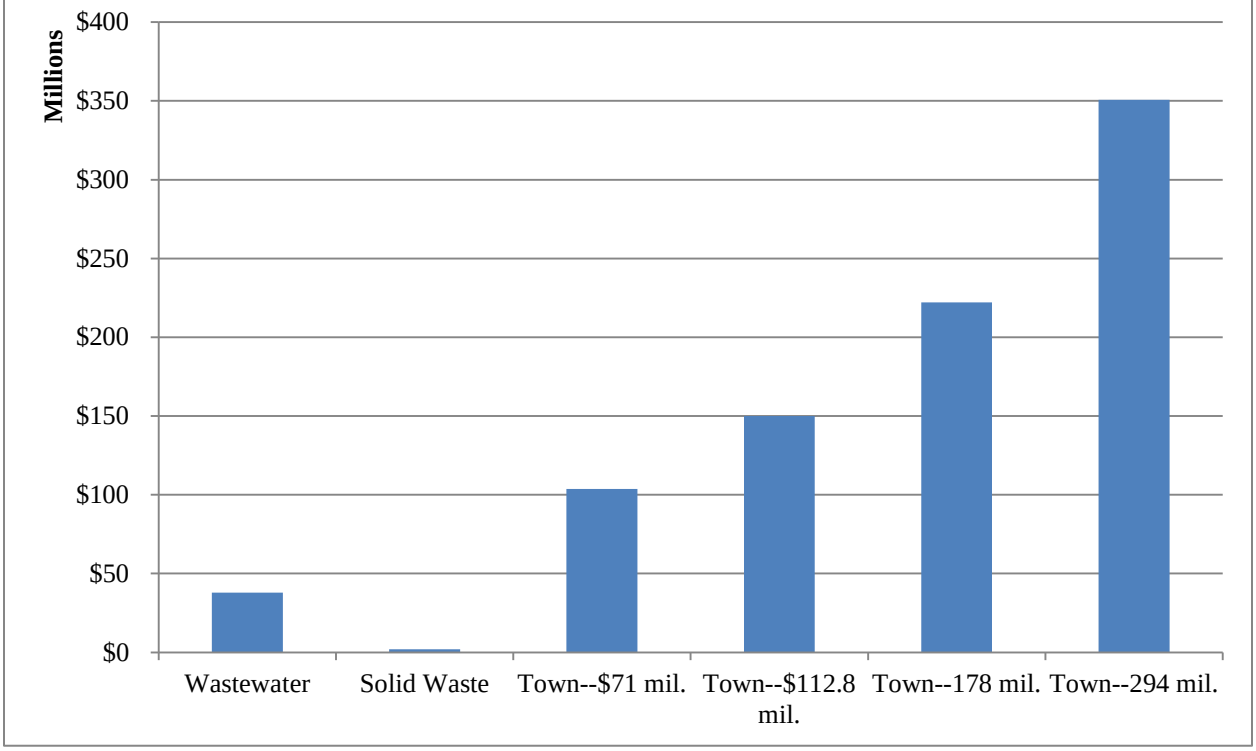
[41] Town of Apple Valley, Adopted Budget for Fiscal Year 2016-2017, p. 30.

Figure 7
Operating Revenues of Town of Apple Valley Enterprises



Assets under Town management would increase significantly if the Town acquires Liberty Utilities Apple Valley (see Figure 8). The Town's current enterprises have relatively minimal physical assets when compared to the water system. Getting into the water business will require a transformation of Town employees into major asset managers.

Figure 8
Assets of Town of Apple Valley Enterprises Relative to Water System



Town control of the water system would come with critical new operational responsibilities. Management and staff would be required to have the requisite skill, expertise and experience to operate the water system. Town council members would need to expand the skill set necessary for council decision-making. Consider some of the activities:

- ► Water quality monitoring, compliance with federal and state regulations
- ► Water supply reliability and customer service operations
- ► Infrastructure development and maintenance
- ► Financial risk management and asset management
- ► Employee training and managing of specialized outside vendors

The scale of Liberty Utilities Apple Valley does not sustain the development of full-time in-house expertise for all skilled positions needed to operate the water system. Instead, the Town would have to develop a model based on significant outsourcing to part-time consultants, and the Town would need to have sufficient in-house management expertise to manage the consultants. These are essential elements of any comprehensive plan to assume control of Liberty Utilities Apple Valley.

All water systems in California face many significant challenges. As water quality regulations continue to evolve, which practices and investments should be made to satisfy regulatory obligations? Which are cost-effective? While groundwater has reliably served Liberty Utilities Apple Valley' needs, what will be the best response if problems develop in the aquifer? Should the water system rely solely on the Mojave watermaster or proactively solve problems? What about infrastructure planning, operations and risk management? The experiences of government-owned systems, such as Los Angeles and San Diego, suggest that government ownership is a recipe for deferred maintenance that ultimately translates into deteriorating service and substantially higher costs to address problems that had been kicked down the road due to poor asset management and planning.

Liberty Utilities Apple Valley, Park Water and Liberty Utilities have senior management and staff who are focused full-time on running municipal water systems. Therefore, the individuals responsible for Liberty Utilities Apple Valley have internal resources at their command. Senior management is accountable to the company's Board of Directors and shareholders. The Board is selected by shareholders for the purpose of monitoring the management of municipal water systems. Moreover, the CPUC approves all the company's activities, including rate-setting and capital improvement.

Town ownership places the water system under control of the Town Council. Council members have a broader plate of issues than simply water systems. Inevitably, individuals chosen on a broad range of issues will lack the same depth of intellectual capital in water than those chosen solely for water issues.

Conclusion

From a financial perspective, the Town of Apply Valley pursuit of the Apple Valley Ranchos Water Company is difficult to justify. Acquisition of the system is high, and the problem is that no one can say at this point *how high* that cost will be. Even if the Town could acquire Liberty Utilities Apple Valley at the low end of the Blue Ribbon Committee's valuation range ($71 million), the Town will need to borrow more than $100 million from the municipal capital market. However, it would be extremely unwise to assume that this price will end up being the actual price. In the case of successful contested municipal takeovers of water systems, the final acquisition price is two to three times the initial estimate of takeover proponents.[42] If this proves to be the case in Apple Valley, then higher acquisition costs considered in this study are more indicative of the economic impact of a condemnation of Liberty Utilities Apple Valley.

From an operational standpoint, there appears to be no justification for the takeover. Liberty Utilities Apple Valley has long experience operating the system, has resources from Park Water and Liberty Utilities to draw upon when needed. It has reinvested Liberty Utilities Apple Valley net income and additional financial resources of its parent company to fund capital improvements to the system. The Town, by contrast, has no experience in the operation of the system. Even if it manages to acquire the operational capability needed, the Town would not

[42] The Economic Consequences of Contested Government Takeovers of Investor-Owned Water Utilities, David Soas, Analysis Group, January 2017, p. 28.

benefit from the economies of scale and depth of experience Park Water and Liberty Utilities provide as a result of companywide assets and capabilities.

Again, the experience of successful contested municipal takeovers of water systems is informative. Actual water rates after takeovers are substantially higher than projected by takeover proponents.[43]

A condemnation will increase the fixed cost structure of the water system significantly. All water systems, investor or government owned, face the challenge of managing water rates in the face of declining and variable water sales. Water deliveries in Apple Valley are on a significant downward trend. The variability of annual water deliveries around trend are -8% to +10%. Loading increased revenue requirements and fixed costs on declining and variable water sales is a recipe for accelerating the rate of increase for water rates and increasing the need for larger and larger financial reserves.

From a consumer's perspective, the Town's takeover will have one primary impact: higher monthly water bills. The Town's need to finance the acquisition and then fund operations and capital improvements on a "pay as you go" basis will necessarily result in a Revenue Requirement for the system that is higher than Liberty Utilities Apple Valley' requirements, thus resulting in higher water rates for decades. The condemnation will also change the economics of real estate development in Apple Valley. The significantly higher developer costs will increase housing costs for Apple Valley residents or, alternatively, make real estate development economically unviable. For a community hard hit by the 2008 economic downturn, saddling residents with higher and more variable water rates and higher development costs is not the recipe for a community's economic sustainability.

Rodney T. Smith, Ph.D.
April 27, 2017

[43] *Ibid,* pp. 4-24.